

Notice of Allowability

Application No.

10/779,742

Applicant(s)

MIYA ET AL.

Examiner

Ram N. Kackar

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/12/2006.
2. ☒ The allowed claim(s) is/are 22-33.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Cancel claims 8 - 21 and add the following to replace these claims:

(Note – Since claims 1-7 were cancelled earlier, all the claims from 1-21 stand cancelled after this amendment.)

Claim 22. (new) A plasma processing method to subject substrates to plasma processing in lots having:

- a light-receiving part for monitoring a plasma emission in a process chamber;
 - a spectrometer unit for performing a spectrometry on said plasma emission and to convert the same into a multi-channel signal;
 - an arithmetic unit for performing principal component analysis on the multi-channel signal for each substrate to obtain an average of principal component scores (P_{ij} for j-th substrate of i-th lot);
 - a database for storing a filter vector for obtaining the principal component scores;
 - and a controller for controlling an operation of said plasma processing apparatus;
- the method comprising:
- step (A) of determining a difference ($D_{ij} = P_{ij} - P_{i-1,j}$) of average principal component scores of a substrate in a lot compared to that of a substrate in an identical position in the previous lot;

step (B) of determining an average, a difference of minimum and maximum, and a standard deviation of (D_{ij}) for all substrates in a lot; and

step (C) of comparing the average, the difference of minimum and maximum, and the standard deviation, as determined, with preset thresholds to determine an end point of seasoning.

Claim 23. (new) The plasma processing method according to claim 22, wherein the principal component scores include at least one of a first principal component, a second principal component, and a third principal component,

Claim 24. (new) The plasma processing method according to claim 23, wherein the step (B) of determining effects the respective determinations based upon at least one of the first principal component, the second principal component and the third principal component.

Claim 25. (new) The plasma processing method according to claim 24, wherein the step (B) effects the respective determinations for the first principal component.

Claim 26. (new) The plasma processing method according to claim 24, wherein the step (B) effects the respective determinations for the second principal component.

Claim 27. (new) The plasma processing method according to claim 24, wherein the step (B) effects the respective determinations for the third principal component.

Claim 28. (new) The plasma processing method according to claim 22, further comprising:

a step of performing evacuation after a wet cleaning;

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a step of automatically determining whether a degree of vacuum is adequate or not; and
a step of automatically determining whether there is an apparatus abnormality or not.

Claim 29. (new) The plasma processing method according to claim 28, wherein the principal component scores include at least one of a first principal component, a second principal component, and a third principal component,

Claim 30. (new) The plasma processing method according to claim 29, wherein the step (B) of determining effects the respective determinations based upon at least one of the first principal component, the second principal component and the third principal component.

Claim 31. (new) The plasma processing method according to claim 30, wherein the step (B) effects the respective determinations for the first principal component.

Claim 32. (new) The plasma processing method according to claim 30, wherein the step (B) effects the respective determinations for the second principal component.

Claim 33. (new) The plasma processing method according to claim 30, wherein the step (B) effects the respective determinations for the third principal component.

2.

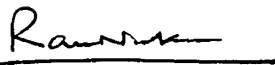
Authorization for this examiner's amendment was given in a telephone interview with Mr. Melvin Krause on 7/21/2006.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N. Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Ram Kackar
Primary examiner AU 1763